

Promoting Active Engagement in the General Education Classroom and Access to the General Education Curriculum for Students with Cognitive Disabilities

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Abstract: This study examined the effects of the Self-Determined Learning Model of Instruction in promoting active engagement in the general education classroom and access to the general education curriculum for three junior high school students with significant cognitive disabilities. The goals included improving public speaking, asking more questions in class, and improving food preparation skills. The students were instructed to employ student-directed learning strategies to achieve their goals. Specifically, antecedent cue regulation (picture cues) and self-instruction strategies were used. Positive changes were reported for all students. Also, all of the students and two of their teachers expressed positive perceptions about the value of such instruction. The implications of these findings with regard to accessing the general curriculum are discussed.

The expectation for the education of students with significant cognitive disabilities, promulgated both by federal law and, increasingly, in best practices, is that such students will be educated with their non-disabled peers and that they will be involved with and show progress in the general education curriculum. These expectations do not mitigate the need for instruction to promote unique student learning needs that are not found in the general education curriculum, but do require that the educational programs of students with significant cognitive disabilities move beyond the status quo of simply functional skills instruction (Spooner & Browder, 2006).

Beyond just expectations, however, there is now an emerging evidence-base documenting

that students with significant cognitive disabilities can gain access to the general education curriculum and documenting practices to promote such access. Spooner, Dymond, Smith, and Kennedy (2006) suggested that there are four general approaches that have been investigated as routes to promoting access to the general education curriculum for students with significant cognitive disabilities: peer supports, self-determination, universal design for learning, and teaching and assessing content standards. Each approach has evidence to support its legitimacy on this list. Carter and Kennedy (2006), for example, documented the evidence base for peer-mediated interventions to support more meaningful engagement of students with significant cognitive disabilities. Likewise, researchers have examined the links between aligning instruction for students with significant cognitive disabilities with state and district-level standards (Browder, Spooner, Wakeman, Trela, & Baker, 2006; Lee, Wehmeyer, Palmer, Soukup, & Little, 2008) and the potential for universal design for learning to impact student access, involvement, and progress (Wehmeyer, Smith, & Davies, 2005; Wehmeyer, Smith, Palmer, & Davies, 2004).

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While we suspect that Spooner and colleagues did not intend that each of these approaches are orthogonal and non-overlapping, it is of value to examine each to determine their impact with regard to promoting student access, involvement, and, ultimately, progress. The fourth approach suggested by Spooner et al. (2006) was the role of promoting self-determination to promote access to the general education curriculum, and the present study focuses on this approach.

Wehmeyer, Field, Doren, Jones, and Mason (2004) suggested the instruction to promote self-determination can promote student access to and involvement in the general education curriculum in two ways. First, in virtually every set of State adopted standards there are student achievement standards in which students are expected to learn and apply effective problem-solving, decision-making, and goal-setting skills. By identifying where in the general education curriculum all students are expected to learn skills and knowledge related to the component elements of self-determined behavior, teachers could promote self-determination and promote access to and progress in the general education curriculum. In addition, teaching students with disabilities skills such as self-regulation, self-management, problem solving, goal setting and decision making provides students with valuable tools to enhance their academic performance. Kame'enui and Simmons (1999) identified one basic design principle of curriculum adaptation to be the use of "conspicuous strategies," noting: "To solve problems, students follow a set of steps or strategies. Many students develop their own strategies, but a considerable amount of time may be required for the student to identify the optimum strategy. For students with disabilities, such an approach is highly problematic because instructional time is a precious commodity and these learners may never figure out an efficient strategy. Learning is most efficient when a teacher can make it conspicuous or explicit" (p. 15). Students who learn effectively set learning goals and objectives to reach those goals and then use problem-solving and self-regulation skills to tackle the activities to achieve those goals, all components of instruction to promote self-determination.

There are several studies that have docu-

mented the relationship between promoting self-determination and access to the general education for students with disabilities. Specifically, these studies have examined the application of an instructional model, the Self-Determined Learning Model of Instruction (SDLMI), described in more detail subsequently, to promote such access (Wehmeyer, Palmer, Agran, Mithaug, & Martin, 2000).

Palmer, Wehmeyer, Gipson, and Agran (2004) used a modified interrupted time series with switching replication design to examine the attainment of goals linked to science, social studies, or language arts standards for 22 middle school students with intellectual disability. Students received support to implement the SDLMI to address a goal that was derived from the state standard in each respective content area that emphasized a self-determination focus. Repeated measures ANOVA for pre and post-intervention problem-solving criterion scores, problem solution scores, and study planning scores revealed significant group by measurement time differences, with students in the experimental group showing significant improvement in their knowledge and skills in all content areas. Students were able to achieve educationally-relevant goals (using the *Goal Attainment Scaling* metric) tied to district-level standards at expected or greater than expected levels, thus supporting the hypothesis that instruction in self-determination can serve as an 'entry point' to the general curriculum for students with disabilities.

Lee et al. (2008) used a pretest-posttest randomized trial control group design with 42 students with cognitive disabilities to evaluate the impact of the *SDLMI* on access and goal attainment. Students who were involved with the *SDLMI* were able to achieve at, in general, a higher than expected rate, self-set goals linked to the general education curriculum. Agran, Cavin, Wehmeyer, and Palmer (2006) examined the effects of the *SDLMI* on the academic skill performance of three junior high school students with moderate to severe intellectual disability using a single-subject design. The academic skills taught students were aligned to the district general education curriculum, and extended benchmarks were individually determined. The students were instructed to engage in a self-regulated

TABLE 1
Student Characteristics

<i>Name</i>	<i>Age</i>	<i>Gender</i>	<i>Grade</i>	<i>Disability^a</i>	<i>Support Needs^b</i>	<i>Participation in General Education</i>	<i>Challenging Behavior</i>
Alisha	15	Female	8 th	Mental disability	Pervasive (Level 3)	Included in 4 out of 7 general education classes	Non-compliance
Emily	14	Female	8 th	Mental disability	Limited (Level 2)	Included in 4 out of 7 general education classes	Easily distracted
Ben	15	Male	9 th	Mental disability, behavioral disability	Limited-extensive (Level 3)	Included in 2 out of 7 general education classes	Inattentive, Oppositional, aggression toward peers

^a Based on state guidelines of need for support. Standardized intelligence or performance test scores are used for supportive information but are not included in the IEPs.

^b Based upon support hierarchy from *Mental retardation: Definition, classification, and systems of support*, by the American Association on Mental Retardation, 2002.

problem-solving strategy, as well as to use one or more additional student-directed learning strategies. Last, Agran, Wehmeyer, Palmer, and Calvin (2008) investigated the effects of the SDLMI on a variety of academic skills for three junior high students with extensive support needs included in a general education Health class. Five generic behaviors were identified: coming to class prepared (i.e., having notebook, writing instrument, and planner), begin journaling (i.e., writing a minimum of three words), take required materials out when requested (e.g., work sheets, instructional materials), begin assignment, and engage in in-group activities as assigned. Positive changes were reported for all students.

The purpose of this study was to extend the literature base pertaining to the role of promoting self-determination as a means to promote access to the general education curriculum. Specifically, this study examined the effects of the SDLMI in promoting active engagement in the general education classroom and access to the general education curriculum for three junior high school students with significant cognitive disabilities, focusing not on academic skill attainment in the general education classroom, but on the attainment of student behaviors that contribute to more positive achievement outcomes.

Method

Participants and Settings

Three Junior High students participated, two females and one male. All students were receiving special education services under the state category of cognitive disabilities, with secondary disabilities of seizure disorder, Down syndrome, and ADHD, respectively. Table 1 summarizes the students' backgrounds. The state in which the study was conducted determines eligibility for services in the area of cognitive disabilities based on level of support needed. Level 1 represents the least support and Level 3 the most. All three students were classified as Level 2 or 3. The students were in at least one general education class per day.

Two of the students, Alisha and Emily, were 8th Graders in a school district serving about 2,100 students. Ben was a 9th grader in a neighboring district serving about 4,500 students. All three students were educated in general education classrooms for at least a portion of their school day. Both Ben and Emily were included in Basic Family Consumer Science classes, while Alisha was in a half-semester Speech class. Ben and Alisha each had an aide who accompanied them to their classes. Emily participated in class without the support of an aide. The aides' respon-

TABLE 2

Standards and Benchmarks

<i>Student</i>	<i>Standard</i>	<i>Benchmark</i>	<i>Goals from Which Selected</i>	<i>Goal Chosen</i>	<i>Measurement of Goal</i>
Alisha	Understand the nature of scientific inquiry.	Design and conduct scientific investigation. (grades 6-8)	Practicing the scientific inquiry (including communication), understanding motion and simple machines, understanding the states of matter.	Increase formal and informal public speaking ability.	Correct performance of public speaking task sequence activities.
Emily	Understand the importance of positive self-concept.	Understand how communication techniques can improve relationships. (8 th grade)	Applying effective listening skills, communicate effectively, learn to become more assertive.	Increase the number questions asked (communicate effectively).	Correct performance of problem-solving steps for asking questions.
Ben	Understand essential nutrition concept and food preparation techniques.	Demonstrate basic food preparation skills by following recipes. (8 th grade)	Prepare various foods in class, learn the names and uses of kitchen utensils, learn the importance of accurate measurement.	Prepare various foods in class.	Correct performance of self-instruction strategy in following recipes.

sibilities were to support the students’ learning needs as well as to assist other students in the class if necessary.

Alisha was in 8th grade Speech and experienced great difficulty in public speaking. She failed to make eye contact, fidgeted much with her hair, and spoke in a quiet mumbled voice. She wanted to increase her speaking ability in both formal and informal speaking. Although Emily was doing well in Family Consumer Sciences class, she would rarely ask any questions for clarification or additional information. Instead she would wait until a teacher noticed that she was not doing anything and then come over and ask if she needed help. Her goal was to increase the number of questions she asked during class that were specifically related to the assignment. Ben had little experience in cooking and difficulty following directions. His goal was to increase his cook-

ing ability by following the directions in recipes.

Dependent Measures

The target behaviors were developed in regard to the school district’s Standards and Benchmarks. The students developed their goals by using the SDLMI (see description of SDLMI in Experimental Design and Conditions). A standard developed by the district was chosen for each student based the results of Phase 1 of the model. Table 2 describes the Standards and goals. The primary dependent measure for the study was the percentage of occurrence of target behaviors performed by each student.

Data collection. One researcher, two paraprofessionals, and one general education teacher collected data throughout the base-

line, intervention, and maintenance conditions. The third author of this paper was the primary data collector, and the paraprofessionals and general educator collected data across approximately 20% of the sessions. The percentage of correct responses was recorded.

Observer training. Observer training consisted of three steps. First, the operational definitions of the target behaviors and the recording system were explained to the observer. Also, the instructional checklist used to monitor treatment fidelity was explained. Second, the observers observed the students in their general education classes and were provided practice in observing and recording the students' performance. Third, the primary and independent observers were provided opportunities to collect data concurrently. When the primary observer reached an 80% agreement across three consecutive sessions, formal data collection began.

Interobserver agreement. Interobserver agreement scores were obtained throughout all experimental conditions. An independent observer observed and recorded participants' performance of target behaviors approximately 25% of the sessions. A point-by-point agreement ratio was used to determine the agreement between the observers. Point-by-point agreement is established by dividing the number of agreements by the number of agreements added to the disagreements and multiplied by 100 (Kazdin, 1982). The range across all students was 94–100%, with a mean of 98% across all experimental conditions for all students. For Alisha, a mean of 99% was reported, with a range of 97–100%. For both Emily and Ben, a mean of 97% was reported with a range of 94–100%.

Experimental Design and Intervention

A multiple baseline design across students ((Tawney & Gast, 1984) was used to examine the effects of the intervention on student performance. The experimental design included three experimental conditions: baseline, intervention, and maintenance. A pre-baseline component was also conducted, but no data were collected.

The SDLMI served as the intervention for the investigation. The SDLMI is a model of teaching based upon the principles of self-

determination and self-regulated learning (Wehmeyer, Palmer, Agran, Mithaug, & Martin, 2000). Model implementation involves teaching students a self-regulated problem-solving process to allow them to set goals, plan courses of action to achieve these goals, self-evaluate their progress, and adjust or modify their goals or plans as needed. There are three phases in the model. Each phase of the model introduces a problem the student needs to address; specifically, What is my goal? What is my plan? What have I learned? Each phase includes a series of four *Student Questions* (see Table 3). By answering each question in Phases 1 and 2, the student informs him- or herself about his or her concern (or problem) and identifies a solution(s) to the problem. Following, the student implements a self-directed strategy to resolve the problem, and, last, evaluates the action taken.

Pre-baseline. Prior to baseline, the students were instructed to go through Phase 1 of the model. This phase consisted of several questions designed to help the students to develop an educational goal. The researchers supported teachers to enable the students to answer the questions in the first phase. Also, the cooperating teachers shared with the students the relevant standards and benchmarks of the school district so that the goals could be aligned with them. With this support, each student was able to set a goal for him- or herself.

Baseline. Baseline data were collected for all students. Baseline for Alisha and Emily took place in the general education classroom they were attending during the hour they participated. Baseline data for Ben were collected during 7th hour study hall on a one-on-one basis with the researcher. Each student was told he or she would be observed during his or her general education class, but was not told why. Continued probes of Emily and Ben took place immediately before they were moved from baseline to intervention. The students' performance related to their chosen target behaviors was recorded. The observations were conducted over the entire class period. No feedback or reinforcement was given during this condition. Movement into training was granted after a student's performance was stable for at least three consecutive data collection sessions.

TABLE 3
Student Responses to Questions

Phase 1

Alisha

- What do I want to learn?—How to speak to people better.
- What do I know about it now?—Nothing.
- What must change for me to learn what I don't know?—Keep my hands (down) and talk louder.
- What can I do to make this happen?—Work harder.

Emily

- What do I want to learn?—To get help in Ms. Jacobsen's (not her real name) class.
- What do I know about it now?—Nothing.
- What must change for me to learn what I don't know?—Ask for help.
- What can I do to make this happen?—Don't know.

Ben

- What do I want to learn?—Make snacks after school.
- What do I know about it now—Can make PBJ sandwiches.
- What must change for me to learn what I don't know?—Nothing.
- What can I do to make this happen?—Learn more stuff to make.

Phase 3

Alisha

- What actions have I taken?—To talk better in class.
- What barriers have been removed?—(No response).
- What has changed about what I don't know?—My eyes (are) up and (I) talk louder.
- Do I know what I want to know?—Yes.

Emily

- What actions have I taken?—Asked question in class.
- What barriers have been removed?—Nothing.
- What has changed about what I don't know?—I don't know.
- Do I know what I want to know?—Yes.

Ben

- What actions have I taken?—Made more foods.
- What barriers have been removed?—Tried stuff with Mike (trainer).
- What has changed about what I don't know?—Tried more stuff.
- Do I know what I want to know?—Yes.

Phase 2 of the SDLMI was completed by each student during baseline. This phase involved four questions to assist the students in developing plans to achieve their goals. Different types of self-directed learning strategies were explained (e.g., picture cues, self-instruction), and the students were asked to choose which one they would like to use. No instruction, reinforcement, or feedback was provided during baseline. Each participant moved into the intervention condition after at least three consecutive sessions of stable responding were observed.

Intervention. The intervention involved implementing the action plan each student had developed using Phase 2 of the SDLMI. Strategies were developed by the researchers to assist each student in achieving his or her goal, based on the learning strategy he or she preferred. Alisha and her associate were trained on how to use an antecedent cue regulation card (picture cues) with symbols of each specific skill performed as she spoke (e.g. eye contact, speaking loud and clear, keeping hands at her side.) Emily was trained to follow a six-step self-instruction problem-solving sequence. The sequence was developed to improve her conversational skills and to increase the frequency of asking question of peers and teachers. Ben was also instructed to use a self-instruction strategy that focused on following the directions to a recipe.

All instruction took place during an open study hall or break period. Approximately 15- to 20-min instructional periods were used. Each participant was instructed on how to use the antecedent cue regulation or self-instruction strategy. First, the strategy was demonstrated by the trainer who provided examples and non-examples of its execution. Following, the students demonstrated the learning strategy and were provided feedback on their performance. Multiple opportunities to perform the strategy with the researcher providing cues and directions as needed were provided. Finally, the student would perform the strategy without support. Mastery of target behavior for all students was set at 80%. Once the participant had reached the established criterion of at least 80% correct responding over three consecutive sessions, the participant moved on to the maintenance condition.

Alisha had a cue card that she took to her

Speech class. The cue card had four different pictures on it (i.e., two eyes, two hands, a face with a smile on it, a speaker with lines coming off it). She was trained what each symbol meant and what she was to do when she looked at the card. The picture of the *eyes* cued her to look at who she was talking to, the *hands* reminded her to keep her hands at her side or on the desk/podium (out of her face), the *face with the smile* prompted her to smile when she talked, and the *speaker* reminded her to speak loud and clearly so people could understand her. Training was done by an associate prior to class. Alisha was also asked after class how she felt she did in class talking with other people.

Emily and Ben had a series of self-instructions they used to guide them through their respective instructional activities. Emily's self-instructions were:

- 1) "I need to ask a question" to identify I need help;
- 2) "What do I ask?" to begin forming a question;
- 3) "Is the question about what we are doing in class?" to make sure the question is specific to what she needs help in;
- 4) "Who can I ask?" to identify who she needs to ask for help (e.g., teacher, associate, peer);
- 5) "Ask the question"; and, last,
- 6) "Did I ask a question about what we were doing in class?" to self-evaluate her performance after asking the question.

Emily was taught how to use the self-instruction prior to her Family Consumer Science class by the researcher who guided her on how to use the self instruction cues, as well as expand her ability to ask others in the class for help when appropriate,

Ben's self-instructions directed him how to follow a recipe. His instructions included:

- 1) Read Recipe out loud;
- 2) Ask an adult if I have questions;
- 3) Collect all ingredients;
- 4) Collect all utensils;
- 5) Read each step out loud and do what it says;
- 6) Put stuff away; and
- 7) Clean space.

Ben was trained during a free period (7th period) of his day by the researcher. He was taught to state the instructions out loud, and then perform the directed instruction. Practice trials were conducted without preparing any food, followed by the preparation of a snack. During the instruction, Ben was initially allowed to have a laminated card with each step printed on it, but this was faded after the first three intervention sessions.

Maintenance. After the intervention was faded, the observations continued for each participant during this condition to assess maintenance. During maintenance each participant completed Phase 3 to evaluate his or her progress in achieving the self-selected goal. No feedback or prompting was delivered. Data continued to be collected until classes were over for the semester. Alisha's speech class ended half way through the semester due to it being a 9-week course.

Social Validation

The SDLMI allowed participants to socially validate the intervention in several ways. First, Phase I included several questions that assisted the student in developing meaningful instructional goals for themselves (see description of Phase I in *Experimental Design and Conditions*). Additionally, the students were asked to provide input on a self-directed learning strategy that they might want to use to promote their learning. For Alisha and Emily, their general and special education teachers supported them as they addressed each of the questions. For Ben, his associate assumed this responsibility. Also, the SDLMI allowed the student to evaluate his or her progress in achieving their self-selected goals in Phase III of the model (see description in *Experimental Design and Conditions*).

Results

Baseline

Figure 1 displays the performance data of each participant. Alisha had range of 20% to 33% with an average of 24% for her public speaking skills. Because of a stable pattern, she was moved into the intervention after 3 days of baseline. Emily had a range of 0% to

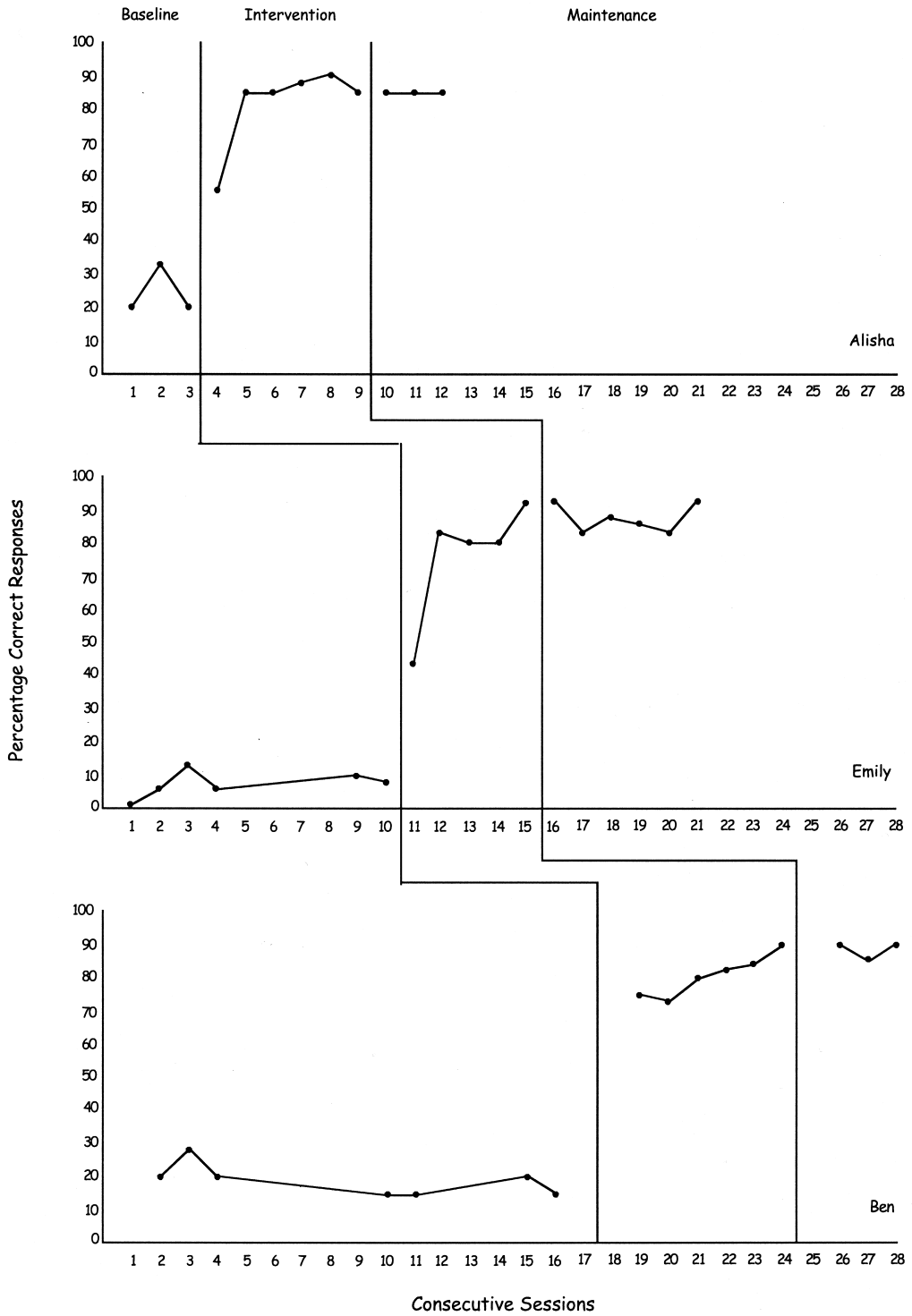


Figure 1. Percentage of correct responses of students across baseline, training, and maintenance conditions.

12% with an average of 6 % for question asking. Ben had a range of 15% to 28% with an average of 20% for following a recipe.

Intervention

There was a marked increase in performance of the target behaviors for all three participants. Alisha had a range of 56% to 90% with an average of 80% in demonstrating her public speaking skills. Emily had a range from 43% to 92% with an average of 76% in demonstrating her ability to ask relevant questions. Ben had a range from 73% to 90% with an average of 81% in demonstrating his ability to follow the directions in a recipe.

Maintenance

All three students maintained their performance at a level of at least 80% for the duration of the study. Maintenance for Alisha lasted for only one week after intervention because her speech course was only one-half of the spring semester. She maintained at 84%. Maintenance for Emily lasted for 5 weeks. She had a range from 83% to 93% with an average of 87% in asking relevant questions. For Ben maintenance lasted for 2 weeks after the intervention had ended. His performance ranged from 85% to 92% with an average of 89% in following directions in a recipe.

Social Validation

Social validation data were obtained from both the participants and their teachers. Table 3 reports the participants' responses to the problem-solving questions in Phases I and III. Alisha and Ben were able to set goals for themselves and determine what they needed to do to achieve these goals. Emily knew what she needed to do (ask for help), but didn't know what to do to change her behavior. In Phase III, the students reported what they did to achieve their goals, and Alisha and Ben indicated what had changed about their situation.

Two of their participants' teachers reported positive changes. Alisha's speech pathologist indicated that Alisha has improved her expressive language in terms of answering questions, sharing, and making requests for basic needs.

Emily's Family Consumer Science Teacher remarked that Emily has been better about asking for help, rather than sitting and waiting for someone to come up and see if she is alright.

Discussion

The purpose of the present investigation was to examine the effects of the SDLMI in promoting access to the general education curriculum of three junior high school students with varying support (limited to pervasive) and learning needs; specifically, public speaking, asking questions, and preparing food. All of the students achieved the mastery level and maintained their performance for the duration of the maintenance condition, which differed across students based on logistical (e.g., semester end) and temporal (e.g., end of school year) factors. Further, the social validation data obtained from the participants and two participating teachers were generally positive. The study adds to the growing research literature that suggests self-determination or student-directed learning strategies and the SDLMI, specifically, can promote access to the general curriculum for students with significant support needs.

Spooner et al. (2006) suggested that a potentially effective way to promote access to the general education curriculum is by promoting students' self-determination, and indicated that the SDLMI represents an instructional model that has been empirically validated. The present investigation provides a further demonstration that the model can be effective in teaching students with disabilities skills that are aligned with district standards and are naturally performed in general education settings. Following the phases of the model, each student took an active role in setting goals for him or herself, developing an action plan to achieve those goals, utilizing a self-selected self-determination strategy to progress meeting the goal, and, last, evaluating how well he or she has done to meet the goal. Even though the student directly employed only one student-directed learning strategy—picture cues for Alisha, self-instruction for Emily and Ben—the SDLMI functions as a self-regulated problem-solving process that involves the use of several self-directed learning strategies—

specifically, goal setting, decision making, self-scheduling, and self-evaluation; and, in doing so, provides an opportunity for the student to have an active role in various aspects of the learning experience. As Wehmeyer (2006) noted, self-determination serves both as an entry point to the general education curriculum as well as to provide the means to teach the skills to engage in the curriculum, and the SDLMI serves both of these functions.

As Agran et al. (2008) indicated, the model's efficacy is not limited to a particular type or class of educational goals. As indicated previously, the model has been shown to produce positive behavior changes across diverse curricular domains, including: academics, transition, social, communication, and functional skill development (see Agran, Blanchard, & Wehmeyer, 2000; Agran et al., 2006; Wehmeyer et al., 2000). In the present study, the effects of the model on two types of communication skills and a functional skill were investigated. Although these skills are not core academic skills, they are skills that allow students to have positive experiences as they participate in the general education curriculum (Ryndak & Billingsley, 2004), and for the two communication skills, have utility in other general education classes. In this respect the study contributes to the literature by extending the research to include two additional skills areas. That said, the primary contribution of the study was that it provided an experimentally-sound demonstration that students with extensive support notes can learn to regulate and evaluate their learning in a general education classroom. Downing (2006) indicated that educators are often in a bind because, although we are asked to recommend evidence-based procedures to promote student access to the general curriculum, there is insufficient research to determine what these procedures are. The SDLMI suggests such an evidence-based procedure in providing through several replications a functional relationship between self-determination and achieving progress in the general curriculum (Wehmeyer, 2006).

Powers (2006) suggested that a major barrier to enhancing the self-determination of people with severe disabilities is the belief among many professionals that promoting their self-determination is not possible or im-

portant. As Powers noted, despite strong advocacy to promote self-determination by researchers, self-advocates, and other members of the professional community, many school systems continue to deny students the opportunities and supports that will allow them to regulate their behavior and manage their learning. It is hoped that studies involving applications of the SDLMI and the varied student-directed learning strategies in promoting access to the general curriculum may have greater power in persuading schools and teachers to advance self-determination than previous efforts have had. Most self-determination applications have involved behavior changes that have been meaningful at the individual and experimental levels and, as such, are highly valued. However, self-determination applications relating to access have an added benefit by suggesting that the general curriculum is accessible and relevant for students with severe disabilities when they are provided instruction in using effective learning tools to access it. Students with severe disabilities are expected to receive the supports, instruction, and opportunities they need to meaningfully access the general curriculum (Carter & Kennedy, 2006). We suggest that models like the SDLMI will help meet this challenge by providing students with a capacity-building process to promote their motivation and engagement in the general curriculum.

Despite the reported changes, a number of limitations warrant attention. First, given the small number of participants, the findings are specific to those students and target behaviors. Needless to say, additional research is needed to investigate the effects of the model on other target behaviors and students with varying learning and support needs. In particular, applications with students with more severe disabilities and greater communication challenges are warranted. All of the students in the present studies verbally communicated their identified goals, intended actions, and evaluative feedback. For students with a more limited communicative capacity, additional modifications to the model would have been needed, and researchers are encouraged to investigate this issue. Second, generalization data were not collected. Such data provide a valid measure of the impact of learning, and

the generalized effects of the SDLMI and other self-determination approaches warrant further study. Third, as indicated by the authors of the present study in previous research (see Agran et al., 2006), the students' progress in meeting specific goals does not provide a measure of their overall progress in the general education curriculum and should not be interpreted as such. There is no question that progress in acquiring the target behaviors assisted the students in meeting the task requirements in the target settings, but we cannot assume that they represent a measure of overall impact. Fourth, no procedural fidelity data were collected. Also, although Phases I and III of the model allow students to provide meaningful input about the effects of the model, limited social validation data in all were obtained. Efforts should be made to obtain data from all relevant stakeholders (e.g., peers, general and special educators, paraprofessionals). Last, although the reported data suggest that the SDLMI was effective in supporting the students' in their efforts to acquire the target skills, it remains uncertain if the model was effective in enhancing the students' overall self-determination. As indicated previously, the model involves the students' execution of several strategies (e.g., goal setting, decision making), so it would appear that such a relationship would be evident. However, without a discrete pre- and post-assessment (such as Martin & Marshall's *ChoiceMaker Self-Determination Transition Assessment* {1996} or Wehmeyer & Lawrence's *Whose Future is it Anyway? A Student-Directed Transition Planning Program* {1995}), such effects remain speculative.

In our efforts to ensure that students with severe disabilities participate in and access the general curriculum, we must acknowledge that traditional procedures involving decisions by others (e.g., teachers, administrators) on what they think is best for the student to learn and how he or she acquires that skill will not suffice. Instead, we need to endeavor to actively involve the student in decision making and have him or her assume ownership for their own learning. The SDLMI serves as a potential useful way to achieve this outcome, and, as a consequence, enhance learning and, hopefully, self-determination.

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